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PALMETTO

AVIATION

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Runway Incursions: A Problem Multiplied

Runway incursions are not only a nuisance, but they can also be potentially catastrophic to those involved.

The Federal Aviation Administration has become increasingly aware of just how potentially hazardous runway incursions can be and that incursions are on the rise.

In a report released earlier this month, the FAA has tackled this problem in an effort to reduce the number of runway incursions.

FAA Administrator James B. Busey said the report, "Considered the total operational environment

in analyzing the problem — the controllers, the pilots, the airports, and the support personnel. Thus, recommendations developed has the benefit of multiple perspectives."

The report also states that the FAA considers runway incursions to be an ongoing problem warranting further study. Although many studies of runway incursions have been published, and the FAA has taken efforts to alleviate the problem, runway incursions still persists. In 1987, the Administrator directed the Air Safety Division to

identify causes of incursions and recommend measures for reducing incidents.

The study was divided into two phases, Phase I included an Aviation Safety Bulletin and a videotape which were distributed in 1988. While Phase II examined the runway incursions problem from multiple perspectives — the tower cab, the airport, the cockpit, and engineering. When combined these perspectives would give the FAA an analysis that would serve as the basis for an integrated FAA

See Runway Incursions, Page 6

Laugh & Learn at '90 Airports Conference

It's not too early to plan for this year's Airports Conference. The 1990 Airports Conference will be held at the Radisson Resort in Kingston Plantation in Myrtle Beach on November 13-16.

The Tuesday through Friday conference will feature some interesting and entertaining people.

One person, you won't want to miss is South Carolina native Col. Charles Bolden of NASA who just recently returned to Earth after launching the Hubble Space Telescope. He'll enlighten us with his unique perspective of air and space travel.

For those of you who don't miss a trick. Don't be
See Laugh & Learn, Page 6



In May, Columbia Metro played host to Air Force One bringing it's favorite passenger, President George Bush to meet with Gov. and Mrs. Carroll Campbell.



PALMETTO AVIATION is an official publication of the South Carolina Aeronautics Commission. It is designed to inform members of the aviation community, and others interested in aviation, of local developments in aviation and aviation facilities, and to keep readers abreast of national and international trends in aviation.

The Aeronautics Commission is a state agency created in 1935 by the South Carolina General Assembly to foster and promote air commerce in the state.

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AOPA Introduces New Pilot's Manual

A new book series, The Pilot's Manual, is being introduced by the AOPA Air Safety Foundation.

The series covers all aspects of general aviation flying and flight training for students, instructors and pilots.

The four-volume series is the most comprehensive aviation reference book available today. "The Air Safety Foundation is pleased and proud to bring these excellent books to you," said Donald Engen, president of the Air Safety Foundation.

The authors "have written, in the language of aviation, a series of books on flying that will be classics

in their own right," Engen added.

All volumes are written to present essentials of flight, beginning with basic VFR maneuvers and progressing through IFR operations. Topics include aircraft systems, performance and limitations, weather, regulations, airspace, flight planning, navigation, aeromedical factors, instrument flight, recommended training maneuvers and much more.

The series is available from the AOPA Air Safety Foundation for \$21.95 plus \$2.50 shipping and handling. Orders may be made by calling 1-800-638-3101 during regular business hours.

Summerville's Airport Has New FBO

Carolina Aviation is the new fixed based operator at the Dorchester County Airport located in Summerville.

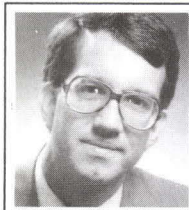
Tom and Mary Sue Brown, owners of Carolina Aviation, have recently finished a complete renovation of the lounge area, classrooms, office and maintenance hangar. Besides warm hospitality, the FBO is offering

major airframe and powerplant repairs, flight training (private through ATP), hangar rental, AV gas, jet fuel and aircraft sales.

Tom and Mary Sue have been in aircraft sales since 1987 at the Dorchester County Airport. In addition, Tom is a FAA Designated Pilot Examiner and a former chairman of the Dorchester County Aeronautics Board.

Charleston Authority Chairman Named to Congressional Board

Charleston Aviation Authority Chairman David G. Jennings has been appointed to the Advisory Board of the Congressional Travel and



Tourism Caucus by U.S. Representative Robin Tallon.

The Advisory Board is composed of travel and tourism professionals from around the nation and advises the Caucus on legislation that would benefit and strengthen the travel and tourism industry.

South Carolina Aeronautics Commission Offices are at Columbia Metropolitan Airport. **Mailing Address:** Post Office Drawer 280068, Columbia, South Carolina, 29228. **Phone:** (803) 822-5400, or 1-800-922-0574.

Stormscope Seminar Planned

A free 3M Stormscope Weather Mapping seminar will be held June 19 in Columbia.

The seminar, sponsored by the Aeronautics Commission, will be conducted by Ralph Manuel of 3M's Safety and Security Systems Division.

The free seminar will be held at the Civil Air Patrol Building at

the Columbia Metropolitan Airport at 7 p.m. on June 19 and is open to the public.

Topics to be discussed include an overview of stormscopes, the difference between stormscopes and radar, and basic thunderstorm meteorology. A hands-on demonstration will follow the presentation.

Seven State Airports Receive Project Funds

Cheraw Municipal Airport, Anderson County Airport, Fairfield County Airport, Clemson-Oconee Municipal Airport, Greenville Downtown Airport, Saluda County Airport and Lancaster County Airport received funding for projects at the State Aeronautics Commission meeting in Columbia.

The Aeronautics Commission held their regular monthly meeting at the commission's office where commissioners approved \$208,500 in state funds for airport projects on Monday, May 21.

When completed, these projects will generate more than a half million dollars in total funding costs when combined with federal grants.

Commission Chairman Jim Hamilton announced the following state allocations:

- **Cheraw Municipal Airport**— \$9,000 approved to erect safety and security fencing from major highways and road accesses;

- **Anderson County Airport** — \$10,500 approved to install chain link fencing for area of future airport development;

- **Fairfield County Airport** — \$150,860 approved to construct a terminal building and attendant

parking area;

- **Clemson-Oconee County Airport**— \$11,250 approved to seal and fill-in asphalt surfaces of runway, taxiways and apron;

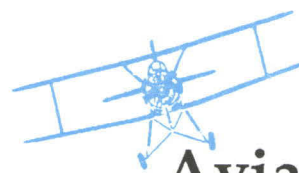
- **Greenville Downtown Airport** — \$14,813 approved to construct two helipads;

- **Saluda County Airport** — \$10,000 approved to install medium intensity runway lighting system, rotating beacon, and precision approach path indicator;

- **Lancaster County Airport** — \$2,110 approved for a visual approach descent indicator for navigational purposes.

Of these projects, the Lancaster Airport and the Greenville Downtown Airport, were allocated federal funds. The remainder of the airport projects are funded with 50/50 state and local sources.

The Aeronautics Commission is responsible for fostering the growth of air commerce in the state, cooperating in the development and improvement of airports as well as supervising aeronautical activities and facilities. The Aeronautics Commission also acts as a funding agency awarding capital improvement bond grants for eligible airport improvement projects.



Aviation Calendar

June 5-10

Confederate Air Force
"Fifi" B-29 &
"Diamond Lil" B-24
Eagle Aviation
Columbia Metro Airport
Daily tours: 10a.m. -7p.m.

June 6

Myrtle Beach AFB
Open House
Thunderbirds

June 10

Breakfast Club
Kirk Air Base
Near Lancaster

June 12-17

Confederate Air Force
"Fifi" & "Diamond Lil"
Cornerstone Aviation
Greenville Downtown

June 19

3M Stormscope Seminar
CAP Bldg.
Columbia Metro Airport
7 p.m.

FREE -- Open to the Public

June 24

Breakfast Club
Advantage Aviation
Open House
Donaldson Center

July 8

Breakfast Club
Royal Aviation
Woodward Field
Camden

July 22

Breakfast Club
Greenville Air Center
Greenville Downtown

Aug 5

Breakfast Club
Marion, NC

Sumter County Airport

Around the bend in the two-lane highway in rural Sumter County lies one of the state's best airports.

The T-hangars have weathered quite a few storms; the fence has been blown down, and the terminal building has lost its awnings and its sparkle.

Yet, you can tell that the Sumter County Airport is one of the state's best loved airports.

Some months ago, when hurricane Hugo touched down in South Carolina, this part of the countryside was devastated. Houses, mobile homes, businesses and buildings were torn a part in most of Sumter County.

"Hugo took our main hangar and just blew it to pieces," said Gene Rickenbaker, chairman of the Sumter County Airport Commission.

Days after the hurricane, a fly over of the airport revealed that the main hangar was pushed from its foundation to behind the terminal building. Pieces of metal siding were strewn from one end of the terminal to the other. In addition, some aircraft were destroyed, the airport lighting regulators were damaged and the terminal building needed roof repair. The security fencing around the storage hangar

was demolished and the T-hangar doors were blown off.

Rickenbaker said the hurricane was the cause of many major repairs around the airport. "We need new fences, a new sign," he said. "They were all blown down."

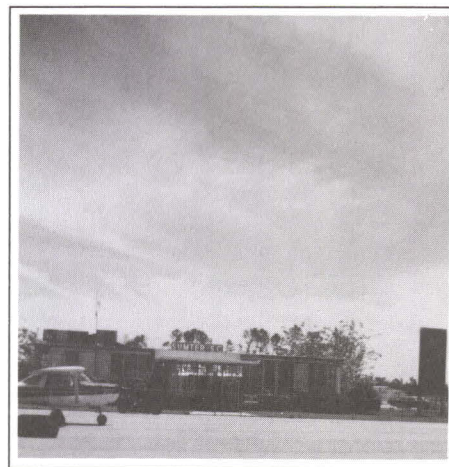
"Some good things did come out of Hugo," he added. "We have already settled with our insurance company. And our new hangar is larger with bi-fold doors. The new hangar is 100 x 130, while the old one was 80 x 100...On the second day after Hugo, I could not believe the hangar building."

"Our airport electrical systems were devastated, VASIs all torn out. Runway lights were broken," Rickenbaker then motioned above the hangar. "The beacon tower was in the middle of the hangar. Now because of Hugo we basically we have a new beacon."

Rickenbaker walked around the T-hangars. "These T-hangars were re-worked. These were literally wiped out. The doors were ripped out. We just patched them up," he proudly remarked.

The county has approved building new T-hangars, but said the chairman "We need to get bids that are low enough so we can pay them. The first few bids were way out of our range. So we'll re-bid them later."

Post-Hugo clean up was difficult but necessary. Today only



A new terminal building to replace this one is on Sumter's wish list for the future.

remnants of the big storm survive, but the financial assistance Sumter needs still remains as strong.

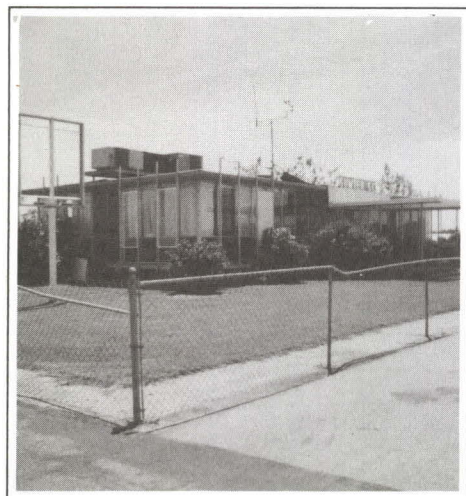
Rickenbaker was pleased with the Economic Development Assistance Program that helps with federal funds for Hugo relief. "Hopefully, we'll get a grant that can be used with the insurance money to revamp the terminal building."

The sixty-ish style terminal building features a flat roof with lots of windows and open spaces and was built about 25 years ago.

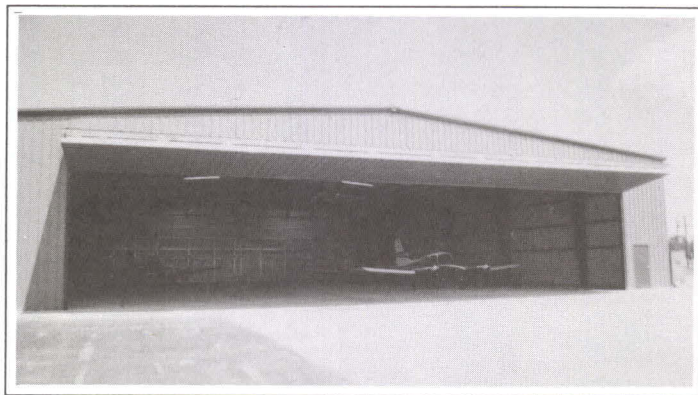
"We're about due for a new bldg," Rickenbaker added. "We need this grant badly."

The Sumter County Airport has about 25 planes based there with mostly transient traffic.

The major companies which utilize the airport are Campbell's



The terminal building (l) and its fencing suffered nominal damage by Hugo. But the hangar was demolished and has been replaced by this new one (r).



Finds Its Place In the Sun

Hugo Damage

- large storage hangar collapsed
- aircraft destroyed and damaged
- 3 airport lighting regulators damaged
- minor roof and metal siding
- damage to terminal building
- t-hangar damage
- security fencing around storage hangar damaged
- t-hangar demolished

This was the scene (right) at the Sumter County Airport after Hugo. The main hangar building was shoved out of place and metal siding was strewn everywhere.



Soup, Becton Dickerson, surgical suppliers, Union Camp, Crescent Tool Co. and Mosler Safe Co.

Rickenbaker estimated 14 new industries have settled in the area in one and half years. "We don't have adequate facilities in our terminal building for crews and pilots to come here. We should have conference rooms and the FBO needs more space."

"It's probably the hardest thing to sell," he emphasized, "How many people do not attach the significance of the airport with the industry around it."

He continued, "It's a hard story to convey, we need to show the benefits of an airport. Our elected officials are very good about knowing how the airport works for the good of the community. We're very lucky in that aspect."

Rickenbaker said the local Chamber of Commerce is actively pursuing some commuter airlines to start business here, so more businesses and industries will have access to the Sumter area.

One of the most stable influences on the Sumter County Airport is Matt Matteson. He's been at the airport since it was opened. At that time in 1965, he started Matt's Automotive to repair aircraft. Matteson has his A&P license, and does a fine job. But that really isn't why

people continue to go to him. It's because he has a quick wit, and easy smile and is truly a character.

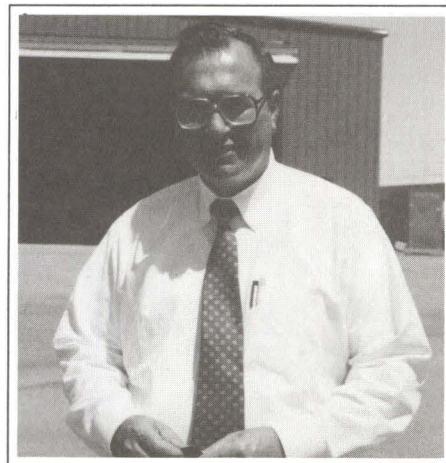
For the future, Sumter County Airport's wish list is much like every airport in the state. "We need a new terminal building," Rickenbaker added, "Plus a new terminal building will be pleasing to the eye. We'd like a commuter service, and our county is fully behind this. Hopefully with Shaw AFB and new industry locating in the area the demand will be there."

Rickenbaker pointed out one big disadvantage about a commuter service is the nearness to Columbia and Florence. He said that with a commuter airline the airport would need an instrument approach and a weather station.

But for the immediate future, Rickenbaker indicated his overall concern for the airport itself. "The biggest thing is getting the terminal

building and then, settle down from Hugo...That will allow us to focus on what lies ahead."

What lies ahead for the Sumter County Airport may not be a smooth road with the wind at their back. But at least they have the support of good, concerned, caring people like Gene Rickenbaker and Matt Matteson who will be with them through it all.



Above, Sumter County Airport Commission Chairman Gene Rickenbaker stands in front of the new hangar. At left is Matt Matteson with his faithful kitty assistant, Hammer Head.



Laugh & Learn at the 1990 Conference

Continued from Page 1

fooled into missing our Wednesday luncheon. Ralph Hood, a columnist and humorist from FBO Magazine, will trick us into laughter with his down-home Southern style humor. He has appeared at many major national conventions and has always brought the house down. He's the cure for boring seminars.

Do you watch Educational Television's Nature Scene? Even if you don't, you shouldn't miss this

great opportunity to hear Rudy Manke, a state naturalist, environmentalist and host of Nature Scene. He'll present his views on South Carolina's environmental health and what we can do to assist in this effort. Later that same afternoon, Rudy will guide us through the local terrain showing us new ways to see nature on a personal scale on a nature walk.

Registration for this year's conference is \$125 a person. Spouse

rates will be set later. Rooms, all suites, at the Radisson Resort are \$65 a night, but be sure to tell the hotel you're with the Airports Conference for this special rate.

We'll keep you informed of the latest details of our conference as they materialize, as well as registration forms, hotel reservations and actual schedule.

With this line up of speakers and entertainment, this year's conference should be the best ever.

Runway Incursions -- Solving the Problem

Continued from Page 1

program to resolve the problem.

According to the FAA report, the principal factors of runway incursions can be grouped into several categories.

Controller-related causal factors —

- Erroneous scanning, or failure to scan the runway or approach path (local controller and ground controller).
- Forgetfulness about the traffic situation (local controller and ground controller).
- Misjudgment of traffic separation (local controller).
- Lack of coordination or inadequate coordination with the local controller on runway crossings.

- Errors in sending or receiving clearances and instructions.

Pilot-related factors —

- Failure to understand clearance and instructions.
- Forgetfulness
- Inadequate or faulty position awareness
- Inadequate scanning.

Ground vehicle Operator-related factors. These incursions may be caused by ground vehicle

operators who proceed onto the runway without proper clearance. Previous statistics on this type of incident are highly suspect.

- Failure to understand clearances and instructions.
- Forgetfulness
- Inadequate scanning.
- Inadequate or faulty position awareness
- Inadequate knowledge of radio communication procedures
- Inadequate measures to deter unauthorized vehicles.

Other factors, such as obstacles (object, wildlife) on the airport surface.

Based on the FAA report, the following general recommendations were made to deal with the runway incursion problem:

- Establish an FAA steering committee on runway incursion reduction, chaired by the Office of Safety Oversight.

The mission of this committee would be to coordinate the recommendations contained in this report and to manage and coordinate the runway incursion activities of the various FAA programs, and to promote runway incursion safety

initiatives from the aviation industry.

- Accelerate development and field deployment of Airport Movement Area Safety System.
- Emphasize the analysis of pilot-related causal factors.

In addition to the general recommendations, some very specific recommendations were made by the FAA. First, access national level procedural modifications to see which have been successful. Second, improve information on aircraft performance to support simultaneous intersecting runway operations; third, conduct an evaluation of when various aircraft checklist items should be performed.

Other specific recommendations included: ensure adequate training of ground vehicle drivers by airport operators; develop a booklet of posters describing common types of incursions, and conducting educational seminars for pilots.

To learn more about this report, Reducing Runway Incursions, contact the assistant administrator for Aviation Safety, Safety Information office at (202) 267-7770.

FYI From the FAA

The Silent Emergency: Pneumatic System Malfunction

This safety briefing is excerpted from material from the Federal Aviation Administration Flight Standards District Office.

You fly in actual instrument weather condition and make enough approaches to keep "current," take your biennial flight review from a good instructor, know the "Normal" and "Emergency" procedure sections of your Pilots Operating Handbook, and feel you are qualified to cope with any emergency. Are you? Maybe not.

The NTSB has reported Air Pump/System failure as a factor in an average of two accidents per year over the past eight years. About one-half of the reported cases involved other overriding factors such as loss of control with a back-up electrical gyro available, non-instrument rated pilots flying in instrument weather conditions, and departing with pneumatic systems known to be inoperative.

The most disturbing factor is the remaining half—an average of about one accident per year—occurred to instrument rated pilots who recognized the pneumatic system failure, flew on partial panel in instrument weather conditions for 30 to 45 minutes, then lost control during an instrument approach. Another common denominator was that all aircraft were high performance, retractable gear, single engine aircraft.

Lessons Learned

The lessons are clear. The first is that loss of a pneumatic system in actual instrument conditions, without a back-up system, is an emergency that may become life-threatening unless the airplane can be flown by partial panel into visual weather conditions.

An airplane with a single pneumatic system with no back-up system, or back-up instruments, should not be flown in any IFR conditions that do not provide for quick access to VFR conditions. IFR flight "on top" of cloud lay-

ers with good ceiling underneath should create minimal problems with pneumatic system failure, but flying in actual IFR with low ceilings and visibilities underneath sets the stage for serious difficulties.

The second lesson is that any airplane used regularly in IFR weather should be equipped with either a back-up power source, such as dual pneumatic systems, or back-up electricity powered gyroscopic instruments. Although it is legal to fly single engine aircraft without dual power sources for gyroscopic instruments, and the exposure rate to accidents due to pneumatic system failure while in actual instrument weather is low (one accident for each 40-50,000 general aviation instrument flight plans filed), prudence suggests that a back-up power source is good insurance against being forced to fly partial panel in adverse weather without sufficient practice.

Gyroscopic Instrument Power

Normal instrument flight relies in part on three gyroscopic instruments: an attitude indicator (artificial horizon), a heading indicator (directional gyro) and a turn and slip indicator ("turn and bank").

Pneumatic systems, like other mechanical systems, can malfunction suddenly or slowly. A slow decrease in gauge indications may indicate a dirty filter, dirty screens, sticking regulator, worn out air pump or leak in the system. Zero pressure could indicate a sheared pump drive, pump failure, a collapsed line, or a malfunctioning gauge. Any operation out of the normal range requires immediate attention by a mechanic.

A complete pneumatic loss is noticeable immediately on the gage or within minutes by incorrect gyro readings. A slow deterioration may lead to sluggish or incorrect readings which may trap a pilot who is constantly cross-checking all instruments—in-

cluding the vacuum or pressure gauge.

If You Are Not Instrument Rated

If you are not instrument rated and inadvertently encounter instrument weather, the 180° turn is usually the best course of action. If your pneumatic driven gyro instruments fail, it is still possible to make a 180° turn by using the turn and bank, magnetic compass and clock. These procedures may be tailored to each airplane type and model and should be demonstrated by and practiced with an instructor.

If You Are Instrument Rated

If you are instrument rated and gyro instruments fail or mislead, do not be afraid to ask for help. ATC personnel know where to find better weather and are able to give "no gyro" heading directions. The whole system—radar, weather reports, communication, and personnel—is instantly available to assist you.

Don't try to be a hero and continue on bravely as if loss of pneumatic power was no big deal. It can be a serious emergency unless you have maintained high proficiency in partial panel flying.

Also cover the dead or lying instruments. Most partial panel practice is done with covered instruments, but in real cases the artificial horizon will be sagging and giving erroneous information that your instincts want to accept as correct.

Back-up the Better Way

If your airplane does not have a back-up system, and if you use your airplane for IFR, consider a back-up pneumatic system. Several manufacturers offer a variety of systems that supply vacuum or pressure if the engine driven pump fails. While the chances of pneumatic system failure is small, those same statistics also demonstrated that the cost of a stand by system is far less than the too often fatal results of not having a back-up.



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Inside Palmetto Aviation

- Airport Incursions -- An Airport's Nightmare
- Sumter County Has a Well-loved Airport
- AOPA's New Pilot's Manual

... and much, much more!

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JUN 18 1990

STATE DOCUMENTS

President Bush Returns to South Carolina



President George Bush returned to South Carolina in May to address the graduates at the University of South Carolina commencement. When Air Force One touched down at Columbia Metro, all the appropriate dignitaries were on hand to greet him. Above right, the President waves to the cameras amidst a sea of secret service agents.

Left, Governor and Mrs. Carroll Campbell got a chance to talk with the President before he left for USC.

Barbara Bush, center photo, arrived moments later at Eagle Aviation where she was greeted by Bob Waddle, executive director of the airport.

This publication is printed and distributed by the South Carolina Aeronautics Commission in the interest of aviation safety and to foster growth of responsible aviation in the state. The viewpoints expressed in articles credited to specific sources are presented as the viewpoints of those writers and do not necessarily reflect the opinion of the South Carolina Aeronautics Commission.